

MEMORANDUM

Engineering Division



To: Transportation Subcommittee Members -
Mayor Esteves and Vice-Mayor Gomez

Through: Charles Lawson, City Manager

From: Greg Armendariz,
Director of Public Works/City Engineer

By: Jaime O. Rodriguez
Acting Traffic Engineer

Subject: Tech Memo – School Crossing Study –
Recommended Policy for Establishment of Adult Crossing Guards

Date: June 20, 2006

Recommendations:

- ① Approve Recommended Policy for Intersection Evaluation Criteria for the Establishment of Adult Crossing Guards
- ② Approve School Crossing Guard Establishment Recommendations
- ③ Authorize Staff to Implement Enhanced Crosswalk Improvements at Each Existing School Crossing Location
- ④ Direct Staff to Modify the Crossing Guard Schedules to Correspond with Pedestrian Peak Periods & School Bell Schedules
- ⑤ Implement Bi-Annual Evaluation & Reporting of Program

Background:

Currently, Milpitas has 36 school crossing guards spread out over 28 intersections. This Technical Memo was prepared by Milpitas – Traffic Engineering to document:

- The intersection evaluation criteria used by other agencies for the establishment of school crossing guard locations,
- To identify & recommend the appropriate crossing guard establishment criteria for use in Milpitas, and
- To determine the appropriate locations where crossing guards should be deployed to enhance school pedestrian safety

A complete list of existing adult crossing guard locations including times when crossing guards are present at the intersections is included in Attachment 1.

MUTCD – California Supplement – Recommended Crossing Guard Evaluation Criteria

The Manual of Uniform Traffic Control Devices (MUTCD) is the engineering manual used by the City of Milpitas and other cities across the country to ensure the uniform deployment of traffic control devices such as signs and roadway markings. In California, a supplemental engineering manual to the MUTCD provides for the use of additional traffic control devices that are specific to California. Included in the MUTCD – California Supplement is suggested adult crossing guard evaluation criteria that should be satisfied when crossing guard deployment is being considered; this criteria is also provided to assist agencies in managing resources.

To: Transportation Subcommittee Members: Mayor Esteves & Vice-Mayor Gomez
Subject: Tech Memo – School Crossing Study – Recommended Policy for Adult Crossing Guards
Date: June 20, 2006
Page: 2 of 7

This State suggested-criteria includes suggested minimum hourly vehicle and school pedestrian volumes that should both be satisfied for at least two hours each day prior to the deployment of crossing guards. Flexibility in the suggested criteria is provided through the use of Special Factors such as special consideration from the local agency's governing council or sight distance restrictions that may deem a crossing guard appropriate when the vehicle and school pedestrian volumes are not satisfied.

Table 1: MUTCD – California Supplement - Recommended Criteria for Adult Crossing Guards

Intersection Control Type	Min. Hour Vehicle Volume	Min. Hour School Pedestrian Volume	Min. No. of Hours Criteria Should be Met*	Special Factors to be Considered
Traffic Signal	300**	40	2	As Appropriate
STOP Control	500	40	2	As Appropriate
Uncontrolled	350	40	2	As Appropriate

* Any two hours of the day, not necessarily consecutive.

** Conflicting volumes only

Twelve agencies were contacted to determine what evaluation criteria they use when considering the deployment of crossing guards. Half of the agencies surveyed are using the State suggested evaluation criteria, while the other half is using a modified version or no evaluation criteria at all. All the surveyed agencies define “School Pedestrian Volume” as children in grades K-6 only, accompanying adults and older children are not considered the School Pedestrian Volume is being counted; see Table 2 below.

Table 2: Research Summary on Other Agency Evaluation Criteria for School Crossing Guards

Agency	Traffic Signal Minimum Hourly Volume		STOP Control Minimum Hourly Volume		Uncontrolled Minimum Hourly Volume		Special Factors
	Vehicles	School Pedestrians	Vehicles	School Pedestrians	Vehicles	School Pedestrians	
Irvine	350	80	500	80	350	80	Police Capt. OK
Davis	300	50	500	50	350	50	
Palo Alto	300	20	500	20	300	20	
Fremont	300	20	300	20	300	20	City Council OK
Los Gatos	300	40	500	40	350	40	
Mountain View	300	40	500	40	350	40	
Pleasanton	300	40	500	40	350	40	Annual Review
Sunnyvale	300	40	500	40	350	40	
Walnut Creek	300	40	500	40	350	40	
Campbell	No Current Policy or Evaluation Criteria						
Hayward	School District Manages & Pays Program – No Warrants Met						
San Jose	Formula-Based Equation						

To: Transportation Subcommittee Members: Mayor Esteves & Vice-Mayor Gomez
Subject: Tech Memo – School Crossing Study – Recommended Policy for Adult Crossing Guards
Date: May 23, 2006
Page: 3 of 6

The cities of Irvine, Davis, Palo Alto and Fremont use a criteria other than the MUTCD – California Supplement with Irvine having the most stringent criteria and Fremont having the most relaxed.

The City of Hayward eliminated its Crossing Guard Program in the mid-1990's because none of the locations where crossing guards were deployed at that time met suggested State criteria. The Hayward Unified School District took over the program and continues to manage it to date. The City of San Jose uses a special formula-based equation system that is more stringent than the State suggested criteria.

Analysis:

Milpitas – Recommended Crossing Guard Evaluation Criteria

Staff supports the establishment of evaluation criteria to ensure that recommendations regarding the addition or removal of crossing guards are based objectively. Furthermore, establishing evaluation criteria provides equity between neighborhoods, schools, and residences, as all locations will be measured against the same criteria.

Staff recommends that a modified version of the MUTCD – California Supplement Vehicle and School Pedestrian Volumes be utilized in Milpitas when considering the establishment of crossing guards and for determining if existing crossing guards are properly deployed. Specifically, staff recommends that rather than using the State recommended volume thresholds as minimum volumes that must be satisfied for two hours of each day that they be used as threshold volumes that must be satisfied for peak periods specific to each school crossing location instead. A peak period can last as long as an hour-and-a-half to two hours and better defines the period when crossing guards are needed. Secondly, rather than requiring that the threshold volumes be satisfied for a minimum of two hours of the day, staff recommends that the volume thresholds should be considered satisfied if both volume thresholds are satisfied for any one peak period of the day. Lastly, because Milpitas has an unusually diverse community compared to most cities where 70% of non-Caucasian residents speak a language other than English at home, staff recommends that all pedestrians grades K – 12 be taken into consideration when counting the School Pedestrian Volume. This is critical along corridors such as Escuela Pkwy where there is an elementary, middle and high school within a ¼-mile radius of each other and on Yellowstone Av where an elementary and middle school are within a ¼-mile radius of each other.

Staff recommends the use of Vehicle and School Pedestrian Volume threshold criteria for the establishment of crossing guards provided in Table 3.

Table 3: Milpitas - Recommended Criteria for Establishment of Adult Crossing Guards

Intersection Control Type	Minimum Vehicle Volume	Minimum School Pedestrian Volume	Minimum No. of Peak Period's Criteria Should be Met*	Special Factors to be Considered
Traffic Signal	300**	40	1	See Below
All-Way or Minor St STOP Control	500	40	1	See Below
Uncontrolled	350	40	1	See Below

* Peak Period identified through traffic data

** Conflicting volumes only.

To: Transportation Subcommittee Members: Mayor Esteves & Vice-Mayor Gomez
 Subject: Tech Memo – School Crossing Study – Recommended Policy for Adult Crossing Guards
 Date: June 20, 2006
 Page: 4 of 7

The use of vehicle and pedestrian volume thresholds should not be the only deciding factor when the establishment of crossing guards is being considered. Special Factors should be identified & adopted, so that staff consistently and equitably evaluates school crossing locations in the same manner. Staff recommended Special Factors include:

Special Factors – Engineering

- Sight Distance:* When the proposed school crossing location is not consistently visible by all approaches for the vehicle stopping distance of each approach, based on posted speed limits, crossing guards should be considered.
- High Pedestrian Volumes:* When there are at least 60 school pedestrians during each peak period and at least 70% of the required vehicle volumes during each peak period, crossing guards should be considered.
- Crash History:* When correctible bike/pedestrian crashes or a high occurrence of vehicle crashes has occurred at an intersection within a 24-month period, engineering judgment should be used to determine if the use of a crossing guard may help enhance school pedestrian safety.
- Complex Geometric Design:* At intersections with offset or oblique approaches exist, crossing guard should be considered.
- Safety:* When engineering judgment identifies a location(s) for crossing guard deployment based on any of the above elements or other unusual conditions, crossing guards should be considered.

Special Factors – Quality of Life

- City Council Support:* When the City Council identifies a location as an appropriate school crossing location with crossing guard support to sustain the quality of life of the community, pending funding.
- Chief of Police:* When the Chief of Police identifies a location as an appropriate school crossing location with crossing guard support to sustain the quality of life of the community, pending funding.

Milpitas – Recommended Crossing Guard Criteria Evaluation Results

Staff collected traffic data at each of the 28 existing school crossing locations where crossing guards are deployed and compared the data to the recommended crossing guard establishment criteria in Table 3. Traffic data was collected during days with fair weather when walking to school was more likely to ensure a high volume of pedestrian activity, see Attachment 1. Five locations do not meet the criteria or special factors for establishment of crossing guards:

Table 4: Existing Crossing Guard Locations that Do Not Meet Suggested Establishment Criteria

No.	Intersection Name	Existing Control	AM1 Peak Volumes		AM2 Peak Volumes		PM Peak Volumes	
			Pedestrians	Vehicles	Pedestrians	Vehicles	Pedestrians	Vehicles
1	Canton Dr & Roswell Dr	All-Way STOP	62	432	-	-	70	252
2	Arizona Av & Boulder St	Minor St STOP	30	788	-	-	27	401
3	Conway St & Dixon Rd	Minor St STOP	23	241	-	-	48	277
4	Abel St & Great Mall Pkwy	Traffic Signal	0	2018	-	-	4	1820
5	Fallen Leaf & Greenwood Wy	Minor St STOP	19	440	-	-	25	374

The Transportation Subcommittee members, Mayor Esteves & Vice-Mayor Gomez, recommended during the May 23, 2006 meeting that crossing guards at four of the five locations be maintained in efforts to sustain the Quality of Life for students & residents at those locations. Staff also identified one location that does meet the suggested criteria in Table 3 but adult crossing guards are not currently deployed, Escuela Pkwy & Jacklin Rd. The Transportation Subcommittee members recommended relocating the crossing guards from Abel St & Great Mall Pkwy to Escuela Pkwy & Jacklin Rd starting in the 2006-07 school year.

Suggested Enhanced School Crossing Safety Improvements

During the collection of traffic data, staff identified potential improvements for deployment at each intersection to enhance pedestrian visibility and safety. The various types of engineering improvements are provided in Table 5:

Table 5: Suggested School Crossing Safety Improvements

Safety Enhancement	Description
<i>Enhanced Crosswalk Markings</i>	The use of ladder-type crosswalks across high-volume arterials can help to provide additional awareness to motorists of school crossing ahead.
<i>High-Visibility Signage</i>	The use of yellow-green pedestrian signage consistent with the MUTCD can help to provide additional awareness to motorists of school crossings.
<i>Flashing Beacons</i>	The use of pedestrian or crossing guard activated flashing beacons are a great tool to provide awareness to school crossing only when pedestrians are present, thus greatly enhancing the school crossing environment
<i>Pedestrian Countdown Signals</i>	The use of pedestrian countdown signals is now available for use in the engineering tool box in the MUTCD. These devices provide additional information to pedestrians regarding the amount of time remaining in the “Flashing Don’t Walk” pedestrian display.
<i>Audible Pedestrian Signals</i>	The use of audible pedestrian signals, in combination with pedestrian countdown signal devices, help bring additional awareness to pedestrians when the “Walk” pedestrian display is active to encourage pedestrians to begin crossing during the “Walk” display.
<i>Intersection Visibility</i>	Pedestrians & crossing guards should be visible to motorists at all times while they are within the sidewalk zone. Each school crosswalk should have a minimum of 20-ft of No Parking restrictions at each approach and within each intersection to maintain proper visibility between pedestrians and motorists
<i>Crossing Guard Schedules</i>	The actual peak periods when school-aged pedestrians were observed to be traversing through the intersections is not consistent with the actual times that crossing guards are scheduled. Staff recommends that crossing guard deployment times be modified to match the actual crossing periods identified in Attachment 1. The crossing guards should be stationed at the intersections for the entire period peak period

To: Transportation Subcommittee Members; Mayor Esteves & Vice-Mayor Gomez
Subject: Tech Memo – School Crossing Study – Recommended Policy for Adult Crossing Guards
Date: June 20, 2006
Page: 6 of 7

Staff recommends that the above engineering improvements be implemented as soon as funding opportunities are identified.

Suggested Routes to School Evaluation Criteria

In addition to recommending the establishment of crossing guards at intersections because of vehicle and school pedestrian volume thresholds, a “Suggested Routes to School Map” can also be used to recommend crossing guard locations because of known or planned walking route impacts due to development growth.

The City of Milpitas has “Suggested Route to School Maps” for each of the elementary schools in the City, that were prepared by staff in 2003. At the time the maps were prepared, existing crossing guard locations were documented. If the City Council chooses to adopt evaluation criteria for the establishment of school crossing guards suggested in this memorandum, the maps should be updated to reflect locations that meet the establishment criteria.

School Crossing Guard Program Management & Criteria Evaluation

The police department in each of the cities surveyed in Table 2 is responsible for managing their school crossing guard program with the exception of Hayward. In most cases, the evaluation of establishment criteria is conducted by engineering staff with the exception of Campbell and Irvine; the Police Departments in those cities also evaluate the warrant criteria. The City of Pleasanton evaluates its crossing guard intersections annually to ensure that resources are properly deployed. Staff recommends that the Police Department continue to manage the City’s Adult Crossing Guard program as the resources to manage and train crossing guards exists solely within the Police Department. Staff also recommends that when requests for additional crossing deployments are received, that a Traffic Engineering study be conducted to compare traffic data at the requested location to the recommended criteria above. Findings should be presented to the Transportation Subcommittee for approval. In addition, a bi-annual evaluation of all crossing guard locations is recommended to ensure that crossing guards are properly deployed and redistributed as communities grow.

Recommendations:

Staff recommends that the Council adopt the recommended criteria for establishment of adult crossing guards as defined Table 3 and the associated Special Factors. In addition, crossing guards from Abel St & Great Mall Pkwy intersection should be redeployed to Escuela Pkwy & Jacklin Rd starting in the 2006-07 school year. Each existing school crossing should be evaluated against the suggested engineering improvements in Table 5 and improvements implemented as soon as funding is identified.

If you have any questions, please contact Jaime O. Rodriguez, Acting Traffic Engineer, at (408) 586-3335.